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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,878	10/23/2003	Takanobu Noda	ADACHI P250US	8984
20210	7590	09/27/2007		
DAVIS & BUJOLD, P.L.L.C. 112 PLEASANT STREET CONCORD, NH 03301			EXAMINER SAYALA, CHHAYA D	
			ART UNIT 1761	PAPER NUMBER
			MAIL DATE 09/27/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<p align="center"><b>Office Action Summary</b></p>	<p>Application No.</p> <p align="center">10/691,878</p>	<p>Applicant(s)</p> <p align="center">NODA ET AL.</p>	
	<p>Examiner</p> <p align="center">C. SAYALA</p>	<p>Art Unit</p> <p align="center">1761</p>	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____                                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/23/03, 11/17/03</u>  | 6) <input type="checkbox"/> Other: ____                           |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102/Claim Rejections - 35 USC § 103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 3, 5 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Noda et al. (US Patent 6254656)

The patent discloses fertilizers that contain silica gel. The claims are written in a product-by-process format and as such, it is the novelty of the instantly claimed product that need be established and not that of the recited process steps. In re Brown, 173 USPQ 685 (CCPA 1972); In re Wertheim, 191 USPQ (CCPA 1976). "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even

though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted)

2. Claims 1, 3, 5, 7 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Marx et al. (US Patent 3137564).

The patent discloses fertilizers with silica gel. Claim 1 discloses a mixture of silica gel with fertilizers that produce ammonium ion, calcium ions and trace elements such as iron. The claims are written in a product-by-process format and as such, it is the novelty of the instantly claimed product that need be established and not that of the recited process steps. *In re Brown*, 173 USPQ 685 (CCPA 1972); *In re Wertheim*, 191 USPQ (CCPA 1976). "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted).

***Claim Rejections - 35 USC § 103***

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3. Claims 2, 4, 6, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marx et al. in view of Milliken et al. (US Patent 2456721).

Marx et al. is as described above. The fertilizer is not shown as a paste state. Milliken et al at col. 1, show that when water is added silica gel a “wet clay” appearance results, which would meet the “paste” terminology and render these claims obvious to one of ordinary skill in the art at the time the invention was made.

4. Claims 9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noda et al. in view of Ashley et al. (US Patent 2478519) and Krekeler et al. (US Patent 3801705) and further in view of Winyall (US Patent 4216113) Iwamoto (US Patent 4290895) and Takeuchi et al. (US Patent 4212664).

Noda et al. has been described above. It details the preparation of the silica gel at col. 2, lines 25-54, mixing silicate with sulfuric acid and washing this. The other details are not given.

At cols 3 and 4, the Ashley et al. patent describes the precipitation process and conditions, including reacting alkali silicate and the addition of acid to form the hydrogel. Note the detailed discussion at col. 4. At cols. 5 and 6, patentees describe aging the formed hydrogel by contacting with acid between pH of 5.5 to 8.1 (col. 6, lines 64-66), at a temperature in the “neighborhood of 100<sup>0</sup> F” (37.7<sup>0</sup> C). In washing the resulting gel, the patent states that at col. 8, line 1 an acidic wash is optimum. Cols. 4-6 thus describe various conditions, their corresponding effects and the various techniques, so

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that one skilled in the art has the guidance to determine optimum conditions to prepare Noda et al.'s fertilizer.

In the same context, Krekeler et al. discloses preparing silica hydrogels by first treating with acid (col. 2, line 50+) and then aging this at 50-100<sup>0</sup> C at pH of from 3 to 8. See col. 3, line 39+. With regard to claims 10, 12, 14 and 16, patentees teach homogenization or comminution at col. 5, line 5+. Since the product is a gel, then comminution of such would obviously result in a paste-like appearance, unless applicant can show to the contrary and establish that he was the first to invent such an appearance to the silica gel. With regard to claim 13, which calls for additional washing with acid, while repetition of steps is not considered patentable, since they amount to repeating steps which is prima facie obvious, Winyall teaches additional washing with acidified water solution, (col. 3, lines 22-24). Note that Winyall is also drawn to preparing silica. To incorporate such as an additional washing step would have been obvious to the person of ordinary skill since Noda et al. has already shown such a type of washing to take place initially. With regard to the ions being adsorbed on the silica as claimed in claim 15 herein, although the above patents do not teach this, silica has been used widely for ion exchange resins and as catalysts and the adsorption of metal ions and ammonium by silica gel is well known. Iwamoto and Takeuchi et al. disclose the use of silica gel to adsorb ammonium ions. See the abstract and claim 1, respectively. Even though these references are not related to the same area of expertise, silica gels are so widely known for adsorbing ions that one of ordinary skill in the art would have

recognized its usefulness as a substrate in this field of endeavor too, since Noda et al. establish thus. As the Supreme Court has recently explained, "[w]hen a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one" *KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1740, 82 USPQ2d 1385, 1395 (Fed. Cir. 2007).

### **Conclusion**

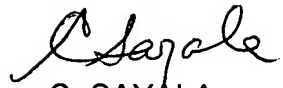
Any inquiry concerning this communication or earlier communications from the examiner should be directed to C. Sayala whose telephone number is (571) 272-1405. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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A handwritten signature in black ink, appearing to read "C. Sayala". The signature is fluid and cursive, with the first letter "C" being large and stylized.

C. SAYALA  
Primary Examiner  
Group 1700.